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D E C I S I O N
of 16 December 2004

Case Number: T 0881/02 - 3.3.3

Application Number: 93118305.7

Publication Number: 0597478

IPC: C08L 1/10

Language of the proceedings: EN

Title of invention:

Biodegradable cellulose ester composition and article produced from the same

Patentee:

DAICEL CHEMICAL INDUSTRIES, LTD.

Opponent:

Rhodia Acetow AG
EASTMAN CHEMICAL COMPANY

Headword:

-

Relevant legal provisions:

EPC Art. 114(2), 123(2), 123(3)
EPC R. 88

Keyword:

"Main request - correction of error (no)"
"Auxiliary requests - extension of scope of protection (yes)"

Decisions cited:

G 0011/91, T 0020/81, T 0581/91, T 0766/91, T 0633/97

Catchword:

-



Case Number: T 0881/02 - 3.3.3

D E C I S I O N
of the Technical Board of Appeal 3.3.3
of 16 December 2004

Appellant: Rhodia Acetow AG
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Decision under appeal: Interlocutory decision of the Opposition
Division of the European Patent Office dated
11 June 2002 posted 15 July 2002 concerning
maintenance of European patent No. 0597478 in
amended form.

Composition of the Board:

Chairman: R. Young
Members: C. Idez
A. Pignatelli

Summary of Facts and Submissions

I. The grant of the European patent No. 0 597 478 in the name of Daicel Chemical Industries, Ltd in respect of European patent application No. 93 118 305.7, filed on 11 November 1993 and claiming priority from three earlier patent applications in Japan was announced on 4 February 1998 (Bulletin 1998/06) on the basis of 30 claims.

Independent Claims 1, 20, 23, 25, and 30 read as follows:

- "1. A biodegradable cellulose ester composition comprising a cellulose ester having an average degree of substitution not exceeding 2.15 characterised in that said cellulose ester has a 4-week decomposition rate of not less than 60 weight percent as determined using the amount of evolved carbon dioxide as an indicator in accordance with ASTM D 5209, and an equivalent ratio of residual alkali metal or alkaline earth metal to residual sulfuric acid in said cellulose ester of 0.1 to 1.1.

20. A biodegradable cellulose ester composition comprising a plurality of cellulose esters varying in the degree of substitution, wherein the proportion of a cellulose ester having an average degree of substitution not exceeding 2.15 and having a 4-week decomposition rate of not less than 60 weight % as determined using the amount of evolved carbon dioxide gas as an indicator in accordance with ASTM D 5209, and an equivalent

ratio of residual alkali metal or alkaline earth metal to residual sulphuric acid in said cellulose ester of 0.1 to 1.1, is not less than 10 weight % of the total cellulose ester.

23. A biodegradable article comprising, as molded or formed, a biodegradable cellulose ester having an average degree of substitution not exceeding 2.15 and having a 4-week decomposition rate of not less than 60 weight % as determined using the amount of evolved carbon dioxide as an indicator in accordance with ASTM D 5209, and an equivalent ratio of residual alkali metal or alkaline earth metal to residual sulphuric acid in said cellulose ester of 0.1 to 1.1.

25. A biodegradable fiber or fibrous article comprising (1) a fiber of a cellulose ester having an average degree of substitution not exceeding 2.15 and having a 4-week decomposition rate of not less than 60 weight % as determined using the amount of evolved carbon dioxide as an indicator in accordance with ASTM D 5209, and an equivalent ratio of residual alkali metal or alkaline earth metal to residual sulphuric acid in said cellulose ester of 0.1 to 1.1, or (2) a mixed fiber composed of said fiber (1) and one or more other cellulose ester fibers.

30. Use of a biodegradable article, wherein the article is formed from a biodegradable cellulose ester composition comprising a cellulose ester having an average degree of substitution not exceeding 2.15 and having a 4-week decomposition

rate of not less than 60 weight % as determined using the amount of evolved carbon dioxide as an indicator in accordance with ASTM D 5209 and an equivalent ratio of residual alkali metal or alkaline earth metal to residual sulphuric acid in said cellulose ester of 0.1 to 1.1."

The remaining claims were dependent claims.

II. On 4 November 1998 two Notices of Opposition were filed against the patent as follows:

(i) by Rhodia Acetow AG (Opponent I) on the grounds of lack of inventive step (Article 100(a) EPC), and

(ii) by Eastman Chemical Company (Opponent II) on the grounds of lack of novelty and lack of inventive step (Article 100(a) EPC, and on the ground of extension of subject-matter (Article 100(c) EPC).

After expiry of the opposition period, an objection of lack of sufficiency under Article 100(b) EPC was raised by both Opponent II (letter dated 11 April 2002) and Opponent I (letter dated 27 May 2002).

Both Opponents requested the revocation of the patent as a whole.

The oppositions were supported *inter alia* by the following documents:

D3: S.A. Rogowin; "Chemie Fasern, Grundlagen der Chemie und Technologie"; VEB Fachbuchverlag Leipzig 1960, page 467;

D4 D. Krüger; "Zelluloseazetate und die anderen organischen Ester der Zellulose"; Verlag von Theodor Steinkopff, Dresden und Leipzig, 1933, page 188;

D17: WO-A-92/09654;

D21: WO-A-93/24685; as well as the later filed, but admitted, document

D24: C.M. Buchanan et al; "The fate of cellulose esters in the environment: aerobic biodegradation of cellulose acetate", Cellulose 91, New Orleans, Louisiana, December 2-6, 1991, abstract 228.

III. By a decision announced orally on 11 June 2002 and issued in writing on 15 July 2002, the Opposition Division held that the grounds of opposition raised and substantiated by the Opponents did not prejudice the maintenance of the patent in amended form.

The decision was based on Claims 1 to 30 submitted as main request during the oral proceedings of 11 June 2002.

Claims 1 to 30 of the main request differed from granted Claims 1 to 30 in that the term "ASTM D 5209" had been replaced by the term "ASTM D 5209-91" in all the claims where this term occurred.

In its decision, the Opposition Division stated that the notice of opposition of Opponent II was inadmissible as far it concerned the opposition ground lack of novelty.

It further held that the ground of opposition under Article 100(b) EPC was late-filed by the opponents and that it should not be considered since it did not *prima facie* prejudice the maintenance of the patent.

The decision held that the main request differed from the application as filed in that the ASTM method used to determine the decomposition rate had been amended from ASTM 125209-91 to ASTM 5209-91 and in that the expression "according to ASTM" on page 12 of the description (sic) had been amended to "analogous to ASTM".

The decision stated that the first amendment could be considered as a correction allowable under Rule 88 EPC, and that the second amendment was supported by the examples in which a modified ASTM method had been applied.

According to the decision, the main request differed from the claims as granted in that the ASTM method for determining the decomposition rate had been amended from ASTM D 5209 to ASTM D 5209-91. Thus, the Opposition Division took the view that, due to the specification of the publication year of the ASTM standard the scope of the main request was narrower than the scope of the patent as granted, and that the requirements of Article 123(3) EPC were therefore met.

Concerning inventive step, document D17 was considered as the closest state of the art. D17 related to cellulose esters having a degree of substitution of 1.7 and showing a degradation of up to 99% within 27 days.

The claimed subject-matter differed from D17 in that the claimed cellulose esters exhibited an equivalent ratio of residual alkali metal or alkaline earth metal to sulphuric acid in the range of 0.1 to 1,1, while D17 was silent about this ratio.

Starting from D17 the technical problem was then seen as the improvement of the biodegradability and thermal stability. The Opposition Division took the view that the technical problem was effectively solved by the selection of this ratio in view of the tests submitted by the Patentee with its letter dated 21 October 1996.

The decision held that document D17 did not give any information on the equivalent ratio, and that the only references giving information on that respect (i.e. D3 and D4) did not refer to biodegradability. Thus, the Opposition Division came to the conclusion that the subject-matter of the main request involved an inventive step.

IV. Notices of Appeal were filed on 23 August 2002 by Opponent II (Appellant II) and on 11 September 2002 by Opponent I (Appellant I) with, respectively, simultaneous payment of the prescribed fee.

V. With the Statement of Grounds of Appeal submitted on 13 November 2002, Appellant II submitted a new document

D26: US-A-3 755 297, as well as

a copy of the documents of the presentation which was intended to be made by the technical expert of Appellant II at the oral proceedings before the Opposition Division.

Appellant II also argued essentially as follows:

(i) The decision of the Opposition Division was subject to a great number of procedural errors and wrong analysis:

(i.1) Contrary to the conclusion of the opposition Division, the cellulose esters tested by Appellant II exhibited a substitution degree, an equivalent ratio, and a molecular weight within the claimed ranges of the patent in suit.

(i.2) Contrary to the conclusion of the Opposition Division, the amount of added neutralizer could not be the basis for the calculation of the equivalent ratio.

(i.3) On basis of these wrong conclusions, the Opposition Division had disregarded the tests submitted by Appellant II.

(i.4) The Opposition Division had further wrongly considered that Appellant II had not submitted the relevant evidence in order to show that the patent in suit did not solve the technical problem.

(i.5) Appellant II had never admitted that the alleged differences in the tested cellulose esters led to difference in the biodegradability.

(i.6) Appellant II did not have the opportunity to present its arguments on the validity of its tests, since a presentation by its technical expert in that respect was not admitted by the Opposition Division.

(i.7) Appellant II had submitted extensive experimental data, which showed that the alleged distinguishing feature i.e. equivalent ratio did not solve the technical problem.

(i.8) The Patentee had submitted no evidence that cellulose esters with the claimed biodegradability could be obtained.

(i.9) It was thus surprising that the Opposition Division considered the proven facts from the side of the Appellant as not pertinent and the not proven facts from side of the Patentee as relevant.

(ii) Article 100(b) EPC

(ii.1) The Opposition Division had been wrong to reject the new ground of opposition under Article 100(b) EPC.

(ii.2) This ground of opposition was based on the tests submitted the letter dated 13 September 2001 of Appellant II, which showed that it was not possible to obtain a cellulose ester having the claimed biodegradability by using the teaching of the patent in suit.

(ii.3) According to the Patentee other structural features were relevant in order to obtain cellulose esters with the claimed biodegradability but neither the Opposition Division nor the Patentee could concretely state which features were relevant for the biodegradability.

(ii.4) Furthermore, the Opposition Division stated that essential features of an invention did not need to be incorporated in the claim.

(iii) Novelty:

(iii.1) The Notice of Opposition of Appellant II contained facts and evidence, which rendered its submissions concerning the ground of lack of novelty understandable. Thus, this ground of opposition should have been admitted.

(iii.2) Documents D24 and D17 disclosed cellulose esters compositions having a substitution degree of up to 2.15.

(iii.3) Although these documents did not *expressis verbis* disclose the other characteristics of the claimed cellulose esters (i.e. biodegradability and equivalent ratio), these features were not relevant since a cellulose ester with the claimed biodegradability could not be obtained, and since the equivalent ratio had no influence on that property. Furthermore it was not clear which equivalent ratio should establish novelty, i.e. the ratio of added

neutralizer to sulphuric acid or the ratio of the total alkali metal/alkali earth metal to sulphuric acid.

(iv) Inventive step:

(iv.1) It had been shown by Appellant II that for a substitution degree in the range from 1.71 to 1.74 the equivalent ratio had no influence on the biodegradability of the cellulose ester, so that the choice of that ratio was irrelevant to the solution of the technical problem.

(iv.2) Thus, the claimed subject-matter did not involve an inventive step.

(v) Article 100(c) EPC:

(v.1) According to the decision G3/89 (OJ EPO, 1993, 117) the parts of a European patent relating to the disclosure may be corrected under Rule 88, second sentence, EPC only within the limits of what a skilled person would derive directly and unambiguously, using common general knowledge, and seen objectively and relative to the date of filing, from the whole of these documents as filed.

(v.2) From the patent specification the skilled person could not know that no ASTM standard with the number ASTM 125209-91 existed.

(v.3) Even if the error in the ASTM number would have been obvious, the correction proposed was not evident in the sense of the decision G 11/91 (OJ EPO, 1993, 125).

(v.4) The amendment made in the description to "analogous to ASTM" also represented an unallowable extension.

VI. In the Statement of Grounds of Appeal submitted on 22 November 2002, Appellant I argued essentially as follows:

(i) Right to be heard:

(i.1) According to the decision of the Opposition Division, the ground of opposition under Article 100(b) EPC had been raised by Appellant I only at the oral proceedings of 11 June 2002.

(i.2) This ground had, however, been submitted with the letter of 27 Mai 2002 (page 2, paragraph 1.4).

(i.3) This showed that this submission of the Appellant I had not been taken into account, and, that its right to be heard had been violated.

(i.4) For this reason the appeal fee should be reimbursed.

(ii) Insufficient disclosure:

(ii.1) According to the claims, the unmodified ASTM standard should be used, but according to the description and the examples a modified ASTM standard was used to determine the biodegradability.

(ii.2) According to the claims the equivalent ratio was based on alkali or alkali earth metal residual, but the description indicated that it was based on alkali metal and/or alkali earth metal residuals.

(ii.3) The Patentee had admitted in its letter dated 9 April 2002 that other structural features (e.g. degree of polymerisation) influenced the biodegradability. These features were however not disclosed in the patent in suit.

(ii.4) In view of these inconsistencies the skilled person did not get a teaching as how to carry out the claimed invention.

(ii.5) The comparative tests submitted by Appellant II with its letter of 13 September 2001 were made according to ASTM D 5209 and using cellulose esters with a substitution degree of 1.7 and various equivalent ratio. These comparative tests had been carried out by an independent institute and the experimental conditions set out in the patent in suit had been followed as exactly as possible. They showed a very low degradation rate far below the required rate of 60%. Nevertheless, the Opposition Division had considered these tests as not relevant because the cellulose esters did not fall under the claims.

(ii.6) In the description of the patent in suit, it was only stated that the degree of substitution and the equivalent ratio were essential for the biodegradability.

(ii.7) It was furthermore not clear what was meant by alkali metal/alkali earth metal residual. Thus, the skilled person would not know whether it was working inside or outside the scope of the claims. In that respect reference was made to the test No. X 28224-2-4 submitted by the Appellant II with its letter of 13 September 2001.

(iii) Inventive step:

(iii.1) The validity of the comparative tests submitted by the Patentee appeared to be questionable, since no control like cellulose had been used and since a sewage sludge different from the one of the examples of the patent in suit had been used.

(iii.2) The comparative tests submitted by Appellant II showed no recognizable dependency of the biodegradability on the equivalent ratio.

(iii.3) Thus, starting from D17 the technical problem was merely to increase the thermal stability of the cellulose ester. It was obvious to solve this problem by using alkali or alkali earth salts and maintaining a sufficient neutrality i.e. a ratio of 1.

VII. The arguments presented by the Respondent (Patentee) in its letter dated 7 July 2003 could be summarized as follows:

(i) Concerning Article 100(b) EPC:

(i.1) The belated objections under Article 100(b) EPC had been disregarded by the Opposition Division. The

Board should only assess whether the first instance had correctly exercised its discretion. It was not the function of the Board to review all the facts and circumstances of the case as if it were at the place of the first instance, and to decide whether or not it would have exercised such discretion in the same way. Reference was made to the decision T 317/98 of 29 June 1999 (not published in OJ EPO) in that respect.

(i.2) The objection under 100(b) EPC had been raised almost 7 months after the submission of its experimental data by Appellant II.

(i.3) This showed that the evidence used as support for its objection could not support that there were *prima facie* clear reasons for believing that this new ground of opposition would prejudice the maintenance of the patent.

(ii) Concerning novelty:

(ii.1) The Opposition Division had not misused its discretion when disregarding the ground of lack of novelty.

(ii.2) The late filed document US-A-3 755 297 did not disclose the substitution degree of the cellulose esters.

(ii.3) Appellant II had failed to show that the compositions of document US-A-3 755 297 exhibited the required biodegradability and equivalent ratio.

(iii) Article 100(c) EPC:

(iii.1) It was obvious that the number of the ASTM standard indicated in the application as filed was erroneous.

(iii.2) The only ASTM standard establishing a decomposition rate in municipal sewage sludge was ASTM D 5209-91. Thus, the correction was obvious.

(iii.3) Thus the correction met the requirements of Rule 88 EPC.

(iv) Claim interpretation:

(iv.1) Claim 1 did not say that the biodegradability was determined according to ASTM D 5209. It only said that the amount of evolved carbon dioxide as an indicator was used in this respect in accordance with ASTM D 5209.

(iv.2) The term ASTM D 5209 in the claims had to be interpreted on the basis of the description (page 8, lines 19 to 28).

(v) Teaching of the patent

According to the patent in suit the biodegradability of cellulose esters could be considerably improved by controlling both the substitution degree and the equivalent ratio.

(vi) Inventive step:

(vi.1) D17 would represent the closest state of the art. D17 was silent on the equivalent ratio.

(vi.2) Starting from D17 the technical problem was to improve the biodegradability and the thermostability of the cellulose esters.

(vi.3) The examples of the patent in suit and those submitted with letter of 21 October 1996 showed that the technical problem had been effectively solved.

(vi.4) The comparative tests carried out by Appellant II were not pertinent since the analytical methods used did not correspond to those indicated in the patent in suit.

(vi.5) In particular the inoculum level and the temperature differed from those used in the patent in suit. Furthermore it was unclear how it would be possible to determine the sulphur content using ICP (induced coupled plasma) emission spectrometry as done by Opponent II.

(vi.6) Although an independent laboratory had carried out the tests, it was Opponent II who submitted the samples. No details were given concerning the preparation of the samples, so that the tests could not be reproduced by the Respondent.

(vi.7) From the comparative tests submitted by AppellantII, it could not be concluded that the indicated range of equivalent ratio was irrelevant to the biodegradability.

(vi.8) Since no prior art suggested the relevance of controlling the equivalent ratio, the subject-matter of the patent in suit met the requirements of inventive step.

VIII. With its letter dated 28 July 2003, the Respondent submitted two sets of 30 claims representing its first and second auxiliary requests.

Claim 1 of the first auxiliary request reads as follows:

"1. A biodegradable cellulose ester composition comprising a cellulose ester having an average degree of substitution not exceeding 2.15 characterised in that said cellulose ester has a 4-week decomposition rate of not less than 60 weight percent as determined using the amount of evolved carbon dioxide as an indicator in accordance with ASTM D 5209-91, using an active sludge of a municipal sewage treatment plant at a concentration of 30 ppm (charge 9 mg) the test sample at a concentration of 100 ppm (charge 30 mg), the test being carried out at 25°C ± 1°C, and an equivalent ratio of residual alkali metal or alkaline earth metal to residual sulfuric acid in said cellulose ester of 0.1 to 1.1."

Independent Claims 20, 23, 25, and 30 differ from granted Claims 20, 23, 25, and 30 in that it has been indicated that the decomposition rate using the amount of evolved carbon dioxide in accordance with ASTM D 5209-91, using an active sludge of a municipal sewage treatment plant at a concentration of 30 ppm (charge 9 mg) the test sample at a concentration of 100 ppm (charge 30 mg), the test being carried out at 25°C ± 1°C.

The remaining claims were dependent claims.

Independent Claims 1, 20, 23, 25 and 30 of the second auxiliary request respectively differ from Claims 1, 20, 23, 25 and 30 of the first auxiliary request, respectively, only in that it has been indicated that the active sludge was Ibo River sewage treatment plant return sludge. The remaining claims correspond to those of the first auxiliary request.

IX. In its letter dated 8 September 2003, Appellant II argued essentially as follows:

(i) Interpretation of the Claims:

(i.1) The interpretation given by the Respondent to the expression "according to ASTM D 5209" in Claim 1 was in contradiction with the description.

(i.2) It remained unclear as to whether the equivalent ratio should be calculated taking into account the total amount of alkali metal and alkali earth metal or the amount of alkali metal or alkali earth metal of the added neutralizer.

(ii) Article 100(b) EPC:

(ii.1) The point in time at which the relevance of the comparative examples for the ground of opposition under Article 100(b) EPC had been recognized, played no role in its relevance.

(ii.2) The reference to T 317/98 was not pertinent, since the comparative examples submitted by Appellant II should, in any case, have been considered when assessing inventive step.

(iii) Novelty:

It was clear that the novelty had been challenged in view of documents D24 and D17.

(iv) Inventive step:

(iv.1) In the examples submitted by the Patentee with its letter of 21 October 1996, a different sewage sludge than in the patent in suit had been used.

(iv.2) According to ASTM D 5209 any carry over of sludge should be avoided, since this could interfere with the determination of the amount of carbon dioxide evolved.

(iv.3) According to the patent in suit the sludge was directly used for the biodegradability test.

(iv.4) Thus, the results presented by the Patentee did not appear to be valid.

(iv.5) The comparative tests submitted by Opponent II showed that the claimed biodegradability according to ASTM D 5209 could not be obtained. They also showed that there was no significant relationship between equivalent ratio and biodegradability.

(iv.6) Contrary to the submissions of the Respondent, ICP could be used for determining the sulphur content.

X. The arguments presented by Appellant II in its letter dated 15 October 2004, may be summarized as follows:

(i) Violation of the right to be heard:

(i.1) According to the case T 174/01 of the first instance of the Court of the European Community, the right to be heard was violated if the decision was based on facts on which the parties had not been heard.

(i.2) In the present case, Appellant II had not been heard on the statement made by the Opposition Division in its decision that no foreseeable conclusion on biodegradability could be made when changing the test temperature from 23°C to 25°C.

(i.3) Appellant II had not been heard on the statement made by the Opposition Division in its decision that essential differences existed between the celluloses tested by Appellant II and those according to the patent in suit.

(ii) Essential features of the invention:

Even if one would consider the biodegradability as an essential feature of the invention, it had not been shown by the Patentee, that the invention solved the problem of obtaining such a biodegradability.

XI. With its letter dated 22 October 2004, the Respondent submitted a further experimental report.

It also argued essentially as follows:

(i) The ICP method was not suitable for determining the sulphur content. This was shown by the experimental report annexed to its letter.

(ii) The method utilised by Appellant II was not the one prescribed in the patent in suit for determining the sulphur content.

(iii) Since the Appellants relied on data obtained by an unsuitable measurement method any attack based on such experimental data would have to fail.

With its letter dated 10 December 2004, Appellant II submitted the following document:

XII. Declaration of Charles M. Buchanan Ph.D. dated 9 December 2004.

It also argued essentially as follows:

(i) The ICP method had a high quantitative and qualitative accuracy.

(ii) If the Patentee maintained that the analytical method disclosed in the patent in suit gave other results, this would imply that the technical problem could only be solved provided this method would be applied. This method was however not indicated in the claims.

(iii) In the patent in suit it was not indicated how the alkali or alkaline earth metal content should be determined.

(iv) Thus, it could be concluded either that the tests submitted by the Appellant II showed that the technical problem was not solved, or that the characteristics of the cellulose esters according to the patent in suit were not relevant.

XIII. Oral proceedings were held before the Board on 16 December 2004.

At the oral proceedings the discussion was essentially focussed on the question of the allowability under Rule 88 EPC, Article 123(2) and 123(3) EPC of the indication in Claim 1 of all the requests of the term "ASTM D 5209-91".

In that respect, the Respondent requested to be allowed to introduce a copy of the ASTM D 5209-91 into the proceedings, whose introduction was opposed by the

Appellants, and, after a short deliberation, also refused by the Board.

While the Parties essentially relied on their arguments presented during the written procedure, they made further submissions which may be summarized as follows:

(i) Concerning the main request:

(i.1) By the Appellants:

(i.1.1) For a correction under Rule 88 EPC, it must be established that the error was obvious to the skilled person reading the application as originally filed, using common general knowledge.

(i.1.2) It was however not obvious that an ASTM standard with the number 12509-91 did not exist.

(i.1.3) Even if one would consider that no ASTM standard with this number existed, it would not have been obvious whether the error lay in the presence of digits 12 before 5209, or of other digits, or even in the wrong indication of the issuing institute (e.g. JIS instead of ASTM since the Patentee was a Japanese company).

(i.1.4) Furthermore, no evidence had been submitted by the Patentee that there was only one ASTM standard dealing the biodegradation of plastic materials. The burden of the proof in this respect was on the Respondent.

(i.1.5) On the contrary, there were several options for the correction, e.g. ASTM D 5209-92, a copy of which had been submitted by the Patentee in the course of the examining procedure.

(i.1.6) Furthermore, as indicated in the letter of 13 September 2001 of Appellant II during the opposition procedure, it was not clear as to whether the ASTM D 5209-91 was similar to ASTM D 5209-92.

(i.2) By the Respondent:

(i.2.1) It was obvious that the number of the ASTM standard indicated in the application as filed was wrong, since there was no ASTM standard having a 6 digit number.

(i.2.2) The person skilled in the art knew that there was only one ASTM standard relating to biodegradation.

(i.2.3) The Opposition Division had accepted the correction. Thus, the burden of the proof in order to show whether there were several standards for determining the biodegradation of plastic materials was on the Appellants.

(ii) Concerning the auxiliary requests:

(ii.1) By the Respondent:

(ii.1.1) Claim 1 of the auxiliary requests should be read as implying that it was the carbon dioxide evolved

which was used as an indicator of the biodegradation according to ASTM D 5209-91.

(ii.1.2) This interpretation was supported by the description.

(ii.1.3) Furthermore, the conditions for the determination of the biodegradation itself (active sludge, temperature, concentration) indicated in the claims were supported by the description as originally filed (cf. page 8, lines 38 to 46, of the published application EP-A1-0 597 478).

(ii.2) By the Appellants:

(ii.2.1) It was not clear which opposition grounds the amendments made in the auxiliary requests should overcome. They were not allowable under Rule 57(a) EPC.

(ii.2.2) Claim 1 of the auxiliary requests infringed Article 123(2) EPC, since the reference to the ASTM D 5209-91 was not supported by the application as originally filed.

(ii.2.3) These claims also infringed Article 123(3) EPC, since the conditions (e.g. temperature) for determining the biodegradation differed from those of the ASTM D 5209.

(ii.2.4) If they were accepted they would furthermore put the Appellants in a worse position than if they had not appealed.

XIV. The final requests formulated by the Parties at the oral proceedings of 16 December 2004 read as follows:

Appellants I and II requested that the decision under appeal be set aside and that the European patent No. 597 478 be revoked;

Appellant I also requested that the appeal fee be reimbursed; and

The Respondent requested that the appeals be dismissed and that the patent be maintained as amended before the Opposition Division (main request), or alternatively, according to first or the second auxiliary request as filed with letter of July 28, 2003.

Reasons for the Decision

1. The appeals are admissible.

2. *Procedural matters*

2.1 As indicated above in paragraph XIII, the Respondent at the oral proceedings before the Board, requested to be allowed to introduce a copy of the standard ASTM D 5209-91 into the proceedings in order to make a comparison with the standard ASTM D 5209-92, a copy of which had been submitted by the Respondent with its letter of 21 October 1996.

2.2 It is, however, established that the similarity of the standards ASTM D 5209-91 and ASTM D 5209-92 has been questioned by Appellant II already in its letter dated

13 September 2001 during the opposition procedure, i.e. at least 3 years before the oral proceedings before the Board. No response to this was received in the meantime.

- 2.3 Furthermore, and, independently of the fact that no justification has been given by the Respondent for the very late filing of this document, it firstly cannot be assumed, as canvassed by the Respondent at the oral proceedings, that the two versions are identical, since, according to the standard itself, the number immediately following the designation (here 91 or 92) indicates the year of original adoption, or in the case of **revision** (emphasis by the Board) the year of last revision. Hence, secondly, it is in any case evident that the complexity of a scrutinised comparison between the "91" and the "92" versions of the ASTM D 5209 would have been such, that neither the Board nor the Appellants could have been expected to deal with it without adjournment of the oral proceedings (cf. also T 633/97 of 19 July 2000; not published in OJ EPO; Reasons, point 2.2).
- 2.4 Consequently, the Board decided not to admit the copy of the ASTM D 5209-91 into the proceedings (Article 114(2) EPC).

Main request

3. *Wording of the claims*

- 3.1 Claim 1 of the main request differs from Claim 1 as originally filed in that (i) the equivalent ratio of residual alkali metal or alkali earth metal to residual sulphuric acid in said cellulose ester of 0.1 to 1.1

has been incorporated therein, and in that (ii) the term "ASTM 125209-91" has been replaced by the term "ASTM D 5209-91".

3.2 While difference (i) indisputably finds its support in Claim 4 as originally filed, it is, however, evident that no explicit support can be found in the application as originally filed for difference (ii).

3.3 In that respect, the Respondent, when trying to justify the replacement of the term "ASTM 125209-91" by "ASTM D 5209-91" submitted that the former statement was the result of an obvious error, and that difference (ii) represented, therefore, a correction under Rule 88 EPC.

3.3.1 According to the decision G 11/91 (Reasons, point 1), a correction is a special case involving an amendment within the meaning of Article 123 EPC.

3.3.2 As further stated in G 11/91 (Reasons, point 4), since a correction admissible under Rule 88, second sentence, EPC is of strictly declaratory nature (i.e. the corrected information merely expresses what the skilled person, using common general knowledge, would have derived from the whole European patent application as filed), it does not infringe Article 123(2) EPC.

3.3.3 Thus, as pointed out in G 11/91 (Reasons, points 5 and 6), a correction under Rule 88, second sentence, EPC is allowable when:

(i) there is such an obvious error that a skilled person is in no doubt that this information is not correct and -considered objectively- cannot be meant to read as such; and

(ii) it is immediately evident that nothing else would have been intended than what is offered as the correction.

3.3.4 Thus, it must be first established whether the skilled reader, using common general knowledge, would have been in no doubt that the term ASTM 125209-91 in Claim 1 as originally filed was not correct.

3.3.5 This would presuppose that the skilled reader would have immediately recognized, using common general knowledge, that the indication of an ASTM standard with a 6 digit number was obviously erroneous.

3.3.6 In that respect, it is normally accepted that common general knowledge is represented by basic handbooks and textbooks on the subject in question (cf. T 20/81, OJ EPO 1982, 217, Reasons point 5). As indicated in decision T 766/91 of 29 September 1993 (not published in OJ EPO, Reasons point 8.2), statements in such works are used as convenient references to show what is common general knowledge, although the information itself is likely to have been published much earlier, for example in research papers or patents, or to have been used openly in industrial practice. As further stated in T 766/91, this information has usually not become common general knowledge because it was published in any particular handbook or textbook, but rather it appears in handbooks or textbooks because it

was already common knowledge. This is the reason, according to T 766/91, that publication in, for example, an encyclopaedia or basic textbook usually can be accepted as evidence not merely that the information was known, but that it was common general knowledge.

3.3.7 In that context, since no evidence such as an encyclopaedia or basic textbook has been submitted by the Respondent in order to establish that no ASTM with a 6 digit number existed before the priority date of the patent in suit, and, since, in the Board's view, publications of standards by the American Society for Testing and Materials (i.e. ASTM) cannot, as such, be considered as belonging to the common general knowledge of the skilled person, it could not have been expected that the skilled person would have immediately recognized that an ASTM standard with a 6 digit number did not exist before the priority date of the patent in suit.

3.3.8 Furthermore, the Board notes that in the application as filed reference is systematically and repeatedly made to the ASTM 125209-91 (cf. page 3, line 20; page 4, lines 19 to 20; page 5, line 12; page 7, line 32; and page 8, line 38 of the published application and original Claims 23, 24, 25, 26, 28, and 33) and, thus, that the term ASTM 125209-91 is neither inconsistent with the remaining part of original Claim 1 nor evidently (i.e. obviously) inconsistent with the whole disclosure of the application as originally filed.

3.3.9 Consequently, the Board can only come to the conclusion that it is doubtful whether Claim 1 as originally filed contains an obvious error.

3.3.10 This conclusion cannot be altered by the fact that it might be true that the incorrect information could have become apparent in the light of the proposed correction, since this is precisely a consideration which should be strictly avoided, as stated in the decision G 11/91 (Reasons, point 5) when establishing the presence of an obvious error.

3.3.11 Since it is doubtful whether Claim 1 as originally filed contains an obvious error, for this reason alone a correction under Rule 88 EPC must be ruled out (cf. G 11/91, Reasons, point 5).

3.3.12 Even if for the sake of argument, one would have considered that the indication of the term ASTM 125209-91 in original Claim 1 amounted to an obvious error, it would have remained to be considered whether or not the condition (ii) mentioned in paragraph 3.3.3 above would also have been fulfilled:

(a) As indicated in decision T 581/91 of 4 August 1993 (not published in OJ EPO, Reasons point 3), a rigorous standard of proof, i.e. equivalent to beyond "any reasonable doubt" has to be applied when determining the allowability of a correction under Rule 88 EPC.

(b) This implies, in the light of G 11/91, that it should be established beyond any reasonable doubt, that the patent application as originally filed directly and unambiguously led the skilled person using common general knowledge to the conclusion that the Applicant, on the date of filing meant

the reference to the ASTM D 5209-91 offered as correction.

- (c) In that context, it is firstly evident that there is no explicit basis for the proposed correction in the application documents as originally filed (cf. paragraphs 3.2 and 3.3.8, above).
- (d) Furthermore, no evidence has been submitted by the Respondent to show, firstly, that the standard ASTM D 5209-91 belonged, at the filing date of the patent in suit, to the common general knowledge of the person skilled in the art, and, secondly, even if this would have been the case, that this ASTM standard was the only one used, at that time for determining the biodegradability of plastic materials.
- (e) While it is true, that the Opposition Division has stated in its decision "that the only ASTM standard for establishing a biodecomposition rate the Opposition Division is aware of is ASTM D 5209-91", this statement merely represents the opinion of the Opposition Division and cannot discharge the Respondent of its burden of proof in this respect, since, in the absence of substantiation by appropriate evidence (encyclopaedia or basic textbook), such statement cannot be used, in view of the prohibition of extension under Article 123(2) EPC set out in decision G 11/91, for proving the common general knowledge on the date of filing in order to establish what a skilled person would directly and unambiguously derive on the date of filing from

the parts of the European patent application relating to the disclosure (cf. also G 11/91, Reasons point 7).

(f) Moreover, it is, on the contrary, established in view of the copy of the ASTM D 5209-92 submitted by the Respondent with its letter dated 21 October 1996 during the examination procedure that at least one further standard (i.e. ASTM D 5209-92) existed before the priority date for determining the decomposition rate of plastic materials.

(g) Consequently, the Board would have come to the conclusion that the content of the application as filed, did not allow the skilled person, using common general knowledge, directly and unequivocally to ascertain beyond any reasonable doubt the precise content the Applicant meant to give at the date of filing, so that condition (ii) for an allowable correction set out in decision G 11/91 would also not have been fulfilled.

3.4 Summing up, the modification (ii) made in Claim 1 is not supported by the application documents as originally filed and, even considered as a correction it does not fulfil the requirements for correction of an error under Rule 88 EPC.

3.5 Consequently, Claim 1 and, hence, the main request as a whole are not allowable.

Auxiliary requests

4. Wording of the claims
- 4.1 Claim 1 of the first auxiliary request differs from Claim 1 as granted in that the expression "in accordance with ASTM D 5209" has been replaced by the expression "in accordance with ASTM D 5209-91, using an active sludge of a municipal sewage treatment plant at a concentration of 30 ppm (charge 9 mg) the test sample at a concentration of 100 ppm (charge 30 mg), the test being carried out at 25°C ± 1°C."
- 4.2 Claim 1 of the second auxiliary request differs from Claim 1 of the first auxiliary request only by the further indication of the municipal sewage treatment plant, i.e. Ibo River.
- 4.3 As stated in the decision of the Opposition Division (cf. point 5.3 thereof) the patent as granted leaves it open which year of the publication of the ASTM D 5209 is chosen. This implies that any ASTM D 5209 published before the priority date of the patent in suit can be chosen for the determination of the decomposition rate of the claimed cellulose ester composition.
- 4.4 In this connection, the Board notes that the ASTM D 5209-92 prescribes a temperature of 23°C ± 1°C for carrying out the decomposition test (point 11.8.5), and the use of 1% inoculum obtained from the supernatant of a sample of a sewage treatment plant sludge for each test (points 9.1 to 9.4), while Claim 1 of both auxiliary requests requires that the test be carried

out at a temperature of $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$ in presence of an active sludge at a concentration of 30 ppm.

4.5 From this comparison of the conditions for carrying out the decomposition tests, it becomes immediately evident, that, due to essential differences in the tests conditions (temperature, biological material and concentration thereof), there will inevitably be cellulose ester compositions, which did not fulfil the requirements in term of decomposition rate set out in granted Claim 1, but which will now meet the new requirements set out in that respect in Claim 1 of both auxiliary requests.

4.6 Consequently, the amendments carried out in Claim 1 of both auxiliary requests inevitably lead to an extension of scope of protection contrary to Article 123(3) EPC.

4.7 This conclusion cannot be challenged by the argument of the Respondent, that the expression "in accordance with the ASTM D-5209" in the granted claims and the expression in "accordance with ASTM D 5209-91" in the claims of both auxiliary requests should be interpreted as merely giving a basis for the use of evolved carbon dioxide as indicator and not as defining as such the method of determination of the decomposition rate, and that therefore the amendments made in the claims of the auxiliary requests further define the conditions of the test for determining the decomposition rate, for the following reasons:

- (a) This interpretation is neither explicitly nor implicitly directly and unambiguously derivable from the description of the patent in suit (cf.

patent in suit, page 7, lines 24 to 25, and page 8, line 20);

(b) Consequently, this interpretation being based only on a postulated ambiguity in the language of both the claims as granted and the claims of the auxiliary requests, it could not be used as a justification for the amendments requested by the Respondent (Patentee), since its inherent ambiguity will inevitably cast a reasonable doubt on the allowability of the amendments.

(c) Since, in accordance with the decision T 581/91, (Reasons, point 3) the slightest doubt that a requested amendment might contravene Article 123 EPC precludes its allowability, the amendments carried out in auxiliary requests 1 and 2 cannot be accepted.

4.8 It thus follows that both auxiliary requests as a whole must be refused.

5. In the absence of any allowable request, the patent must be revoked.

6. *Request for reimbursement of the appeal fee*

6.1 Although Appellant II, in its written submissions, has argued that, in its opinion, the decision of the opposition division had been subject of several procedural errors, it did not, in contrast to Appellant I, make a formal request for the reimbursement of the appeal fee.

6.2 Appellant I has requested the reimbursement of the appeal fee on the grounds that the Opposition Division had not taken into account the arguments concerning the ground of insufficient disclosure (Article 100(b) EPC) presented in its letter dated 27 May 2002.

6.3 In the Board's view, even if the decision of the Opposition Division does not make reference to the submissions made by Appellant I in its letter dated 27 May 2002, and even if it contains an incorrect statement concerning the date at which the ground of opposition under Article 100(b) EPC was submitted by Appellant I (page 3, fourth paragraph), it is, in any case, evident in view of the minutes of the oral proceedings before the Opposition Division (cf. point 3 thereof) that Appellant I has had the opportunity to present its arguments on this ground of opposition during this oral proceedings, so that its right to be heard has not been violated.

6.4 Thus, in the Board's view, no substantial procedural violation which could justify the reimbursement of the appeal fee has taken place in the proceedings up to the decision of the Opposition Division. It follows that the request for reimbursement must be rejected.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The patent is revoked.
3. The request reimbursement of the appeal fee is refused.

The Registrar:

The Chairman:

E. Görgmaier

R. Young